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(71) Patentor Park, Jong-Hyon

15 Korea

346-4 21/3

Jeollabuk-do Iksan-Si, Ma-dong

(72) Inventor Park, Jong-Hyon

20 Korea

346-4 21/3

Jeollabuk-do Iksan-Si, Ma-dong

Examiner Jeong, Jae-Woo

Examiner Jeong, Jae-Woo

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(54) TITLE

METHOD AND APPARATUS FOR GENERATING TONE REPLACING RING-BACK
TONE SELECTED BY CALLED SUBSCRIBER IN CALLED MOBILE SWITCHING
CENTER OF WIRE/WIRELESS COMMUNICATION NETWORK

5

ABSTRACT

The present invention provides a method and an apparatus
for providing another sound specified by a called subscriber
by allowing a called mobile switching center, which gives a
10 real ring-back tone instead of a ring-back tone provided to a
calling subscriber, to connect with a data base system (server)
storing the sound instead of a tone generator when a call is
originated in a wire/wireless communication network.
Accordingly, differently from a technique of providing a simple
15 conventional ring-back tone and a technique of providing
another ring-back tone (a call waiting tone) according to the
selection of the calling subscriber, the present invention can
solve problems according to additional services and states
(Power-off, Busy, No Answer, Paging No Response) of the called
20 subscriber, determine an erroneous connection state before the
response of the called subscriber, and provide a new service
suitable for the personality and the object of the called
subscriber.

25 Representative Figure.

SPECIFICATION

Ring-back tone, communication network, replacement tone

5 BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a simplified structure of transmitting a ring-back tone according to call types in the conventional wire/wireless communication network;

FIG. 2 is a flowchart illustrating a call processing
10 procedure in the conventional wire/wireless communication network;

FIG. 3 is a flowchart illustrating a method of generating a replacement tone replacing a ring-back tone according to a preferred embodiment of the present invention;

15 FIG. 4 is a flowchart illustrating an embodiment of an operation between a called MSC and an SCP through a method for generating a replacement tone according to the present invention;

FIG. 5 is a flowchart illustrating an embodiment of an
20 operation between an SCP and an IP through a method for generating a replacement tone according to the present invention;

FIG. 6 is a flowchart illustrating an embodiment of an operation between a called MSC and an SCP through the method
25 for generating a replacement tone according to the present

invention; and

FIG. 7 is a flowchart illustrating an embodiment of an operation between an SCP and an IP through a method for generating a replacement tone according to the present invention.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

OBJECT OF THE INVENTION

TECHNICAL FIELD AND THE RELATED ART

10 The present invention relates to an apparatus and a method which allow a called mobile switching center actually providing a ring-back tone (transmitted when a call is originated in a wire/wireless communication network) to transmit another tone selected by a called subscriber to a calling subscriber.

15 Currently, when a calling subscriber attempts communication in a communication network such as a public switched telephone network, or a mobile communication network, a mobile switching center controlling a called subscriber employs a scheme of delivering a ring-back tone to a calling
20 subscriber according to the ITU-T standard. In other words, when the calling subscriber makes connection to the called subscriber according to the ITU-T standard in a communication network, the mobile switching center gives a predetermined interrupt period specified by the ITU-T standard and a
25 frequency tone to the calling system.

FIG. 1 is a view illustrating a mobile switching center having a time-space-time switching structure in order to explain the position of receiving a ring-back tone when originating a call in the conventional technique. FIG. 1(a) illustrates a case in which calls are originated and terminated in the same mobile switching center. FIG. 1(b) illustrates a case in which calls are originated and terminated in different mobile switching centers of the same service provider. FIG. 1(c) illustrates a case in which calls are originated and terminated in different mobile switching centers of different service providers, that is, from a packet switched telephony network (PSTN) phone to a mobile phone. In description about a position of receiving a ring-back tone, FIG. 1(a) illustrates a case in which calls are originated and terminated in the same mobile switching center having a time-space-time (T-S-T) switching structure (in the case of a local call). As shown in FIG. 1(a), in the first case of originating and terminating calls in the PSTN phones, when a calling subscriber originates a call, a call control block opens a switching path with a fixed called subscriber side and allowing a calling side to hear a tone provided from a tone generator of a matching part of a called subscriber by delivering the tone to a specific slot of a time switch of the called subscriber. In the second case of the mobile phone, when the calling subscriber originates a call, since a matching part of the called

subscriber is not recognized before the called subscriber gives a paging response, a tone of a matching part of the calling subscriber is provided to a calling side until a called terminal gives the paging response. In addition, when the
5 calling subscriber originates a call, since a subscriber matching part including the called terminal is recognized after the called subscriber gives the paging response, a tone provided by the called matching part while the T-S-T switching path is opened with the called matching part is given to the
10 calling side until the called terminal gives the paging response. FIG. 1(b) illustrates a case in which calls are originated and terminated in different mobile switching center of the same service provider. As shown in FIG. 1(b), in the first case of the PSTN phone, since calling and called mobile
15 switching centers have a plurality of tandem mobile switching centers, and a specific channel such as "T1" or "E1" (a specific Timeslot of pulse coding modulation (PCM)) is allocated between the calling and called mobile switching centers if signals from "IAM" to "ACM" are processed between
20 the called mobile switching center and the final calling mobile switching center, a tone of a subscriber matching part of the final called mobile switching center is delivered to the calling subscriber. In the second case of the mobile phone, since calling and called mobile switching centers have a
25 plurality of tandem mobile switching centers, and a specific

channel such as "T1" or "E1" (a specific Timeslot of pulse coding modulation (PCM)) is allocated between the calling and called mobile switching center if signals from "IAM" to "ACM" are processed between the calling mobile switching center and the final called mobile switching center after the calling subscriber originates a call, a ring-back tone is delivered to the calling side from the called mobile switching center. In this case, a ring-back tone of a matching part of the tandem of the called side is delivered to the calling side until there exists the response of paging, and a ring-back tone of a matching part of a called subscriber is delivered to the calling side after the response of the paging. FIG. 1(c) illustrates a case in which calls are originated and terminated in different mobile switching centers of different service providers, that is, a case of employing a PSTN phone originates a call, and a mobile phone terminates the call. In this case, if "IAM" processing and "ACM" processing in signal processing between a gateway switch of a calling service provider and a gateway switch of a called service provider are finished, since a signal processing time is lengthened according to the increase of the number of tandem mobile switching centers until the position of a mobile terminal is detected so that the waiting time of the calling subscriber is lengthened in a silent tone state, a tone called a Progressive Tone is added in the tandem matching part of the called gateway switch according

to the selection item of the called service provider. After the position of the mobile terminal is detected, if the "IAM" processing and the "ACM" processing in signal processing between the gateway switch of the called service provider and the final called mobile switching center are finished, and the subscriber matching part of the called terminal is recognized due to the completion of the Paging, a tone generator of a tandem matching part of the called mobile switching center transmits a ring back tone to the calling side until the called terminal makes a response. As described above, in the conventional technique, the scheme for the ring-back tone sounded when a call is originated is provided by the final called mobile switching center for controlling the called subscriber using a single tone. In addition, if the conventional ring-back tone is used, it is difficult to determine an erroneous call connection using the single ring-back tone sounded until the called subscriber makes a response. In addition, the conventional ring-back tone scheme is insufficient for providing a service matching with user's personality and demand. Differently from the conventional ring-back tone scheme, there is a technique of providing another commercial advertisement instead of the ring-back tone according to the selection of the calling subscriber in an additional system of the communication network, or controlling the calling subscriber to hear the commercial advertisement and

receive the discount benefit of a communication fee until the called subscriber makes a response (until the called mobile switching center delivers the ANM message to the calling side). However, the technique has the following problems.

5 Hereinafter, problems existing in the case of FIG. 1(b) in which the origination and the termination of calls are achieved by different mobile switching centers of the same service provider as problems existing in call types of FIGs. 1 (b) and (c) described above, will be described. First, in the case of

10 the request from the calling mobile switching center to a system for providing the commercial advertisement, according to the conventional technique, when the called subscriber is in call receive impossible states, such as a "No answer" state, a "Busy" state, and a Paging No Response" state, in a state in

15 which a call is not received, in a communication state, or out of a service area, and when the IAM and the ACM processing in the ISUP signal processing between the calling and the called mobile switching centers are finished, tone or guidance suitable for each state is delivered to the calling side from

20 the called mobile switching center, so that the calling subscriber must receive state information according the sate of the called subscriber through a single tone, or guidance. However, this first case has problem in that there is no a scheme, in which the tone and the guidance is delivered to the

25 calling subscriber by determining and distinguishing each

state, in protocols realized in existing communication networks. Second, when the called subscriber can receive additional services such as an automatic calling system (ACS) and a voice mailing system (VMS) from among additional services
5 generalized according to recent communication service providers, the called mobile switching center finishes the IAM processing and the ACM processing in the ISUP signal processing and performs signal processing together with the third called mobile switching center and the VMS, while informing that the
10 guidance suitable for the state of the called subscriber corresponding to the problem of the first case and a corresponding additional service starts, according to the conventional technique. According to the conventional technique, if the calling subscriber receives a ring-back tone
15 from the third called mobile switching center, and the called subscriber and the VMS make a response, the third called mobile switching center delivers an ANM (Answer) message from among ISUP messages to the calling subscriber. In addition, a system or a terminal, which provides commercial advertisement to the
20 calling subscriber based on the ANM message, recognizes this message as an initial response message of the called system and connects it to the calling subscriber, but the calling subscriber may listen to the guidance of another called subscriber (an automatically connected subscriber) or the VMS.
25 Third, differently from the case of employing the conventional

ring-back tone (a call waiting tone), there is not suggested a scheme in which the calling subscriber can recognize a call processing state by receiving various pieces of information (e.g., call congestion broadcasting and missing number broadcasting), which can be reported by the called mobile switching center and the tandem mobile switching centers, while a call is processed from the called mobile switching center after the origination of the call. Hereinafter, problems when the termination and the origination of calls are achieved between different service providers as shown in FIG. 1(c) will be described. The problems of the case shown in FIG. 1(c) include the first, the second, and the third problems of the case shown in FIG. 1(b). An added problem of the FIG. 1(c) corresponds to the case in which the called subscriber receives an incoming call screening (ICS) service. Recently, mobile phone service providers are competitively introducing a variety of additional services. Among the additional services, there is an ICS service defined in the IS-771 of the TIA/EIA. The SK Telecom provides a caller identification service (CallerID), a password call acceptance service, and a do not disturb service as a kind of the ICS service. The KTF provides a password call acceptance service, a selective call acceptance service, and a "rejection of undesired annoying calls" service. Hereinafter, description of the characteristic of the password call acceptance service will be given among the services. In the

password call acceptance service, if the calling subscriber attempts communication with a called subscriber who subscribes to the password call acceptance service and is activated, a gateway switch of a called service provider transmits an information of "press a password set by a called subscriber" to the calling subscriber. The calling subscriber presses a password two or three times. If the password pressed by the calling subscriber is identical to the password set by the called subscriber, a next call processing is performed. In the services, the mobile switching center of the calling side or the gateway switch of the called side transmits guidance according to each service to the calling side. Then, the calling subscriber performs an operation (the pressing of a specific button) suitable for the guidance. Herein, only when the operation corresponds to a situation set by the called subscriber, a next call processing procedure is normally performed. However, based on various types of additional services of wire/wireless communication service providers, it is difficult for the calling side to perform call processing of analyzing various guidance provided by the called side without a clear remark about how a system providing a commercial advertisement or the calling terminal analyze each guidance and perform a suitable operation. As a result, a technique of giving various sounds for all sorts of calls originated by a specific calling subscriber by changing a ring-back tone

according to the selection of the calling subscriber aims at that the called subscriber provides a commercial advertisement to the calling subscriber instead of the conventional ring-back tone according to the selection of the calling subscriber until
5 the called subscriber makes a response regardless of a scheme of realizing the technique. The response state of the called subscriber may be recognized based on an ANM message of an ISUP message (in the case of ISUP signal processing) provided by the final called mobile switching center through a signal
10 processing procedure in an existing communication network. However, if call flow problems according to various states of the called mobile switching center and the tandem mobile switching center described above are not solved before the ANM message, the suggested techniques in wire/wireless
15 communication networks may be restricted or may not be realized. A ring-back tone (a call waiting tone) sounded in call origination of wire/wireless communication networks does not give a meaningless waiting time to the calling subscriber, but plays a role of a voice information channel informing the
20 calling subscriber of detailed situation information about call flow situation until the called subscriber makes a response. The control of the calling subscriber for this does not exactly transmit the state of a call connection with the called subscriber to the calling subscriber, so that network resources
25 are wasted due to several incompleteness calls in view of a

network provider, and time and costs are wasted in view of users.

TECHNICAL OBJECT OF THE INVENTION

5 A first object of the present invention is to provide a method and an apparatus capable of providing various tones according to the preference of a called subscriber under the control of the final called mobile switching center instead of a simple ring-back tone in the conventional communication
10 network technique, so that a sound set by the called subscriber to replace the ring-back tone is provided to a calling subscriber during a time interval for the conventional ring-back tone, that is, until the called subscriber actually make response even if a call connection is requested from
15 subscribers of domestic/abroad wire/wireless providers.

STRUCTURE AND OPERATION OF THE INVENTION

The present invention relates to a method in which sounds replacing a single ring-back tone provided according to the
20 ITU-T specification in a called mobile switching center controlling a called subscriber regardless of the intention of the called subscriber are selected according to the preference of the called subscriber, recoded, and delivered to a calling subscriber in a public switched telephony network, a mobile
25 communication network, or a future communication network having

a new scheme. According to the present invention, the tone provided by the called mobile switching center controlling the called subscriber in the conventional communication network is transmitted to the calling subscriber until the called
5 subscriber makes a response (during a time interval for the conventional ring-back tone) as described in the conventional technique.

Differently from the conventional technique, according to the present invention, the final called mobile switching center
10 delivers various types of tones selected by the called subscriber to the calling subscriber in a step of sending the conventional ring-back tone when unspecified wire/wireless communication network subscribers inside and outside the country attempt calls a subscriber of a specific communication
15 service provider, thereby solving problems existing in the conventional techniques. In addition, the present invention has a subject matter different from the conventional method in which the calling subscriber selects and listens to advertisement broadcasting using a specific system of a
20 communication network and a calling terminal described in the conventional technique and then receives the benefit of a free communication or the conventional technique in which a subscriber calls a call-back number transmitted as text with an advertisement, listens to the broadcasting during a
25 predetermined time interval, and then makes free communication

during a specified time interval.

The present invention is compatible with a call scenario wherein a ring-back tone is sent according to the convention technique. In addition, both a technique of generating a replacement tone according to the present invention and a technique of generating the conventional ring-back tone may be compatibly employed in a specific communication network. The function of each service node in a call processing procedure defined in the wireless intelligent network (WIN) of the TR-10 45.2 of the telecommunication industry association (TIA)/electronic industry association (EIA) in the United States and introduced based on the IS-41C, which is the mobile communication network standard of the North America, will be described in more detail with reference to FIGs. 3 and 4. Accordingly, the present invention will replace the internetworking with the conventional PSTN.

FIG. 2 is a flowchart illustrating a signal processing procedure in the conventional communication network. Referring to FIG. 2, if a calling mobile switching center transmits an initial address message (IAM) to a called mobile switching center (step S100), the called mobile switching center transmits an address completion message to the calling mobile switching center (step S110). In the case of the PSTN, after this step, a terminal of a called subscriber rings, and a calling subscriber hears a ring-back tone until a response 25

message (ACM) is delivered (step S120).

FIG. 3 is a flowchart illustrating a method of generating the replacement tone of a ring-back tone according to a preferred embodiment of the present invention. A subscriber
5 profile/database has a specific additional service field (e.g., a replacement tone service field), and the specific additional service field is set as a specific value in the case of the replacement tone. According to a preferred embodiment of the present invention, the specific additional service field may be
10 set as "H'0000" in the case of conventional ring-back tone and "H'FFFF" in the case of the replacement tone.

A called mobile switching center (MSC) 400 performs a determination operation based on the specific additional service field and requests analyzed information used for
15 requesting a specific service to a service control point (SCP) 500 (step 1500).

Steps S1000 to S1400 are identical to the conventional call processing procedure in the call termination of a mobile phone shown in FIG.2. In other words, a mobile switching
20 center/visitor location register MSC/VLR 200 transmits a "Location Request (LocReq)" message to a home location register (HLR) 300 in step S1000.

Thereafter, the home location register (HLR) 300 transmits a "Routing Request (rotreq)" message for the connection with
25 the called terminal to a mobile switching center/visitor

location register MSC/VLR 400 in step S1100.

As a result, in a step of transmitting the "rotreq" message, the MSC/VLR 400 transmits information about a temporary local dictionary number (TLDN), which is an
5 identification number temporarily given to the called terminal in order to identify the called terminal in the process of call setup, to the HLR 300. In step S1300, the HLR 300 transmits a "Location Request (LocReq)" message to the MSC/VLR 200. Accordingly, when the called terminal is in a busy state or a
10 power-off state, the calling subscriber hears a tone or guidance from the MSC/VLR 200. In addition, an ISUP call enabling the transmission of the "IAM" is established with the counterpart (step S1400).

Meanwhile, in step S1400, a ring-back tone or a
15 replacement tone is determined according to the set value of the specific additional service field (e.g., a replacement tone service field) of the called subscriber stored in the database of the called switching system. Herein, in the case of the replacement tone, a type of the replacement tone to be
20 transmitted to the calling side and a place generating the replacement tone are not indicated.

Accordingly, a service control point (SCP) 500 receives analyzed information defined in the wireless intelligent network (WIN) from the MSC 200 in step S1500:

25 Herein, the analyzed information includes information

about a mobile phone number (i.e., mobile identification number (MIN)) and information of the specific additional service field. The analyzed information denotes information about whether or not a service for a replacement tone is registered,
5 an intelligent peripheral (IP) storing the replacement tone, and a path for the IP.

Thereafter, a "Seize Resource (SeizeRe)" operation is requested to an intelligent peripheral (IP) 600 in step S1600, and a temporary local directory number (TLDN) delivered in step
10 S1600 is transmitted to the MSC.

Herein, the step of requesting the SeizeRe denotes a step of querying a temporary local directory number (TLDN) for recognizing the IP 600 bringing the replacement tone.

In addition, when a "disconnect resource" message is
15 received from the MSC, a service control point (SCP) may request resource disconnection to the IP 600. In the meantime, in the case of the replacement tone, the MSC/VLR 400 may request the analyzed information to the SCP and wait for a return result in step S1500 shown in FIG. 3.

20 In addition, it is determined if the subscriber is registered in an SCP database, and an IP number is determined in step S1600. Then, "Seize Resource" is requested to the IP 600 in order to obtain a temporary local directory number (TLDN) for routing.

25 The IP 600 receiving the "Seize Resource (SeizeRes)"

returns a TLDN enabling the routing of the IP in step S1700. In addition, the SCP 500 responds to the MSC 400 with analyzed information including a TLDN in step S1800.

As a result, the MSC 400 attempts a call setup with the
5 returned TLDN in step S1900. Thereafter, the IP 600 invokes an instruction request (InstReq) to the SCP 500 in order to query a type of the replacement tone for the received MIN tone to the SCP 500.

Herein, the instruction request (InstReq) indicates a
10 replacement tone to be selected among from allocated replacement sounds belonging to the IP.

Accordingly, the SCP 500 responds to the IP 600 with a specialized resource function directive (SRFDir) by querying the type of the MIN replacement tone to a database in step
15 S2100. Thereafter, the IP 600 having received the SRFDir searches for a corresponding replacement tone and delivers the replacement tone to the calling side by connecting the searched replacement tone to the introduced call (step S2200).

In steps 2300 and 2400, if the called terminal gives a
20 response after paging/alerting the called terminal, the "DisconnRes" message of indicating the release of the trunk between the IP and the called MSC is transmitted to the SCP 500, an answer message (ANM) of the ISUP is transmitted to the calling MSC 200, and then the calling subscriber and the called
25 subscriber enter into a communication state. If a "Paging No

Response" message is generated, or the called subscriber does not answer (No Answer), the "DisconnRes" message indicating the release of the trunk between the IP and the called MSC is transmitted to the SCP 500 in the same manner. In this case, 5 the called MSC releases the trunk, delivers guidance corresponding to the situation to the calling side, and then terminates the call or performs the following step according to the state of additional services of the called subscriber.

FIG. 4 is a flowchart illustrating an embodiment of an 10 operation between the MSC 400 and the SCP through the method for generating a replacement tone according to the present invention. Referring to FIG. 4, the MSC/VLR 400 may transmit analyzed information ANALYZD [BILLID, DGSTDIAL, TRIGTYPE] to the SCP 500 in step S1500. Among from the analyzed parameters, the 15 BILLID denotes billing information, the DGTSDIAL denotes the called MIN, and the TRIGTYPE denotes a replacement tone service.

FIG. 5 is a flowchart illustrating an embodiment of an operation between the SCP 500 and the intelligent peripheral 20 (IP) 600 through the method for generating a replacement tone according to the present invention. Referring to FIG. 5, in step S1800, the SCP 500 determines if the replacement tone of the MIN included in the DGTSDIAL parameter among ANALYZED parameters is employed for a subscriber registered in a 25 database of the SCP. If the replacement tone of the MIN is

employed for the subscriber registered in the database, the SCP 500 can request the "SeizeResource" message to the IP in order to obtain a TLDN for routing to the IP.

FIG. 6 is a flowchart illustrating an embodiment of an operation between the called MSC and the SCP through the method for generating a replacement tone according to the present invention. Referring to FIG. 6, the SCP 500 returns analyzed information to the called MSC/VLR 400 with the TLDN. Thereafter, the called MSC 400 attempts call connection by searching for the IP using the returned TLDN (step S1900).

FIG. 7 is a flowchart illustrating an embodiment of an operation between the SCP and the intelligent peripheral (IP) through the method for generating a replacement tone according to the present invention. Referring to FIG. 6, if a call setup is performed in step S1900, the IP 600 requests "InstructionRequest " to the SCP 500 in order to query an ID number of a replacement tone for the received MIN to the SCP 500 in step 2000.

The SCP 500 searches the database for the ID number of the replacement tone for the MIN in step 2100 and returns the searched result to the IP by including the result to the SFDIR. Sequentially, if the IP having received the SFDIR searches for a corresponding replacement tone and connects the replacement tone after the ISUP ACM, the calling subscriber hears the replacement tone, and the called switching system performs

paging and alerting for the called terminal.

The above description broadly discloses characteristics and technical advantages of the present invention such that the following claims of the present invention can be easily
5 comprehended. Additional characteristics and advantages included in the claims of the present invention will be described below in detail. In addition, it must be noted to those skilled in the art that the concept of the present invention and a specific embodiment of the present invention
10 can be utilized as a base for designing and modifying another structure used for achieving objects similar to those of the present invention.

Although preferred embodiments of the present invention have been described for illustrative purposes, those skilled in
15 the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

20 EFFECT OF THE INVENTION

As described above, according to the present invention, a technique for generating a tone replacing a ring-back tone selected by a called subscriber in the final called mobile switching center provides a tone desired by the called
25 subscriber according to the selection of the called subscriber

to a calling subscriber during a time interval until the calling subscriber is connected to the called subscriber, so that the called subscriber can express his/her preference due to the variety of the provided tone and let the calling
5 subscriber recognize the called subscriber by inserting guidance for the called subscriber.

In addition, according to the present invention, the calling subscriber can determine an erroneous connection state before a communication connection. The communication service
10 provider can buy the present invention in the shape of a service, so that the communication service provider can attract subscribers using the discriminated services. In addition, the communication service provider can obtain enlarged communication income by introducing a system for recoding or
15 changing a sound desired by the called subscriber.

WHAT IS CLAIMED IS:

1. A method for providing a tone of a communication network specified by a called subscriber to a calling subscriber instead of a previous ring-back tone in a called
5 mobile switching center when the called subscriber receives a call connection request in a wire/wireless communication network, the method comprising the steps of:

determining a type of the tone by determining a value set on a specific additional service field in a subscriber profile
10 of a called visitor location register (VLR) before a called mobile switching center (MSC) delivers a ring-back tone through a previous scheme;

performing by the called MSC an analyze information operation requesting generation of a replacement tone to a
15 service control point (SCP) base on a profile of the called subscriber;

inserting BILLID information into analyzed information and disconnect parameters;

receiving by the SCP a temporary local directory number
20 (TLDN) by requesting "Seize Resource" to an intelligent peripheral (IP);

responding with the TLDN of the IP if the IP receives the request of the "Seize Resource";

transmitting by the SCP the TLDN to the called MSC;

25 attempting by the MSC a call connection to the IP using

the transmitted TLDN;

requesting "Instruction Request" used for determining a type of a replacement tone for a received mobile identification number (MIN) to the SCP;

5 responding by the SCP to the IP with a specialized resource function directive (SREDir) by querying the type of the replacement tone to a database;

searching for the replacement tone by the IP received the SREDir and connecting the replacement tone to an introduced
10 call;

transmitting by the called MSC "Disconnect Resource" to the SCP or the IP while transmitting an ISUP ANM message to a calling MSC through the previous technique when an answer is given from a called terminal;

15 transmitting by the SCP "Disconnect" to a corresponding IP when the SCP receives the "Disconnect Resource"; and

releasing by the IP a trunk when the IP receives the "Disconnect Resource" from the called MSC.

20 2. The method as claimed in claim 1, wherein the tone specified by the called subscriber is one or combination of melody, selected sound, guidance, advertisement known to the called subscriber.

25 3. A communication system for delivering a tone specified

by a called subscriber to a calling subscriber instead of a previous ring-back tone in a called mobile switching center when the called subscriber receives a call connection request in a wire/wireless communication network, the communication
5 system comprising:

a subscriber profile including a specific service field used for setting a previous ring-back tone or a replacement tone; and

a database for storing a plurality of replacement tones.